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PA - (TOYW) TOYOTA CENT RES & DEV LAB

PN - JP5058784 A 19930309 DW199315 C30B29/04 006pp

PR - JP19910250399 19910902

XA - C1993-053798

XIC - C30B-025/18 ; C30B-029/04

AB - J05058784 Ultrafine particles of diamond with a dia. of 2 - 100 nm coat the surface of a substrate, and a gas phase growth of diamond is effected with the particles as the nuclei to form a diamond film over the substrate surface. The diamond particles may be spread over a specified domain of substrate surface for selective growth of diamond film.

- ADVANTAGE - Non-diamond deposits are suppressed and good adhesion is attained with more effective bonding surface area between the substrate and the diamond film. The film thickness can be selected over a wide range due to the fineness of nuclei.

- In an example, cluster diamond particles with an average dia. of 5 nm were dispersed in ethanol ultrasonically (0.1 g/25 ml), a Si wafer with specular surface (15 x 15 mm²) was dipped in and then drawn up slowly. After drying the specular surface had been coated with diamond particles. Through thermal filament chemical vapour deposition, gas phase growth of diamond was effected over the dip coated surface to obtain about a 2.5 micron thick diamond film(Dwg.0/9)

CN - R01776-P

IW - DIAMOND DEPOSIT VARY FILM THICK COATING ULTRAFINE DIAMOND PARTICLE
SUBSTRATE EFFECT GAS PHASE GROWTH PARTICLE NUCLEUS

IKW - DIAMOND DEPOSIT VARY FILM THICK COATING ULTRAFINE DIAMOND PARTICLE
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NC - 001

OPD - 1991-09-02

ORD - 1993-03-09

PAW - (TOYW) TOYOTA CENT RES & DEV LAB

TI - Diamond deposition with varied film thickness - by coating ultrafine diamond particles over substrate and effecting gas phase growth using particles as nuclei